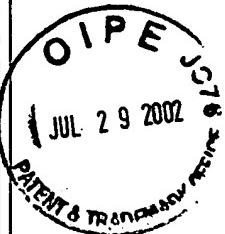


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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of )  
Atsuya KUME )  
Serial No. 09/367,829 ) Examiner: Lana Le  
Filed: August 23, 1999 ) Group Art Unit: 2684  
For: RADIO COMMUNICATION ) July 29, 2002  
SYSTEM )

TRANSMITTAL OF APPEAL BRIEF RECEIVED

Assistant Commissioner for Patents  
Washington, D.C. 20231

AUG 01 2002

Technology Center 2600

Dear Sir:

Enclosed in connection with the above-referenced application is an Appeal Brief with Appendix in triplicate. A check is enclosed to cover the following fees: \$320.00 to cover the fee for filing a brief in support of a notice of appeal.

Also, please charge any additional fees or credit any overpayment to Deposit Account No. 02-2135. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

ROTHWELL, FIGG, ERNST & MANBECK, p.c.

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#131 Appeal Brief

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of ) BEFORE THE BOARD OF PATENT  
Atsuya KUME ) APPEALS AND INTERFERENCES.  
Serial No. 09/367,829 ) Appeal No.:  
Filed: August 23, 1999 ) Examiner: Lana Le  
For: RADIO COMMUNICATION ) Group Art Unit: Z684  
SYSTEM ) Monday, July 29, 2002

RECEIVED

BRIEF ON APPEAL

AUG 01 2002

Assistant Commissioner for Patents  
Washington, D.C. 20231

Technology Center 2600

Dear Sir:

This is an appeal from the final rejection of claims 8-10, 12, 13, 19-21, 23 and 24 of the above-identified application, which claims were finally rejected in the Office action dated December 6, 2001. A Notice of Appeal was timely filed on May 28, 2002.

REAL PARTY IN INTEREST

The real party in interest in this case is Mitsubishi Denki Kabushiki Kaisha.

RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the present appeal.

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STATUS OF THE CLAIMS

Claims 8-24 are pending in the application (claims 1-7 are cancelled); claims 14-18 stand allowed, claims 11 and 22 are objected to as depending from a rejected claim but were indicated to be directed to allowable subject matter; and claims 8-10, 12, 13, 19-21, 23 and 24 stand finally rejected. Claims 8 and 19 constitute the independent claims on appeal. This appeal is directed to claims 8-10, 12, 13, 19-21, 23 and 24.

STATUS OF AMENDMENTS

The Advisory action dated May 22, 2002 indicated that the proposed amendment after final rejection filed April 25, 2002 would be entered upon appeal.

SUMMARY OF THE INVENTION

The present invention relates generally to the field of portable radio communication devices such as mobile cellular telephones, and in particular to a radio communication system that monitors the signal strength and quality of a communication signal being received from a base station, compares the measured parameters with a preset threshold, and when the parameters are below the preset threshold, a control unit of the radio communication system sends an instruction to commence a hand-over operation to transfer the call to a different base station. For

example, the decreased signal strength and/or quality is likely to result from the movement of the radio communication device outside the service region of the existing base station with which it is in communication to the service region of a different base station; the signal strength and/or quality may deteriorate for other systemic or temporal reasons as well. Under such conditions, there may not exist any other base station within the range of the radio communication device to which the call may be transferred. In the prior art, unsuccessful hand-over operations are repeated at specified intervals, i.e., every 5 seconds, and the speech signal is thus interrupted, even further deteriorating the signal quality.

According to the present invention, the frequency of attempted hand-over operations is reduced if there does not exist any other base station within the range of the radio communication system to which the call can be transferred.

According to an embodiment of the invention, as shown in Fig. 3, after a handover instruction is given to the system by the control unit at step ST4, it is determined at step ST5 whether the handover operation was successful. The handover operation is successful if the call is transferred to another base station. Upon determination that the handover operation was not successful (i.e. there did not exist any other base station to which the call could be transferred), at step ST6 the threshold to which the call quality parameters are compared is

lowered, so as to avoid a continued attempt at handover. When a handover operation is successful, at step ST7 the thresholds are restored to their default values.

#### ISSUES

This appeal presents the following issues for decision by the Board:

- 1) Whether claims 8, 9, 19 and 20 are unpatentable under 35 U.S.C. § 102(e) as being anticipated by Balachandran, U.S. Patent No. 5,594,943 and are properly rejected on that basis; and
- 2) Whether claims 10, 12, 13, 21, 23 and 24 are unpatentable under 35 U.S.C. § 103(a) over Balachandran in view of Blasiak et al., U.S. Patent No. 5,711,004 ("Blasiak"), and are properly rejected on that basis.

#### GROUPING OF CLAIMS

Claims 9, 10, 12, 13, 20, 23 and 24 do not stand or fall together with claims 8 and 19 but will be separately argued in this appeal.

ARGUMENT

The Rejection of Claims 8, 9, 19 and 20 Is Improper

The rejection of claims 8, 9, 19 and 20 under 35 U.S.C. § 102(e) as being anticipated by Balachandran is improper and should be reversed. In contrast to the claimed invention, Balachandran discloses a method for handoff or handover operations between base stations for mobile communication calls, wherein if a handover operation is unsuccessful, then an Initial Acquisition Mode process is executed wherein all usable channels are ranked in order of decreasing quality, and then acquisition of each ranked channel is attempted in sequence. If none of the channels can be acquired, the ranking and sequential acquisition attempt processes are repeated. No adjustment of thresholds is performed at all during this mode.

In particular, as shown in Fig. 17, the process goes from a Normal Mode (1701) to either an Undirected Channel Hop Mode (1703) or to an Attempt Handoff Mode (1705). The Attempt Handoff Mode goes to either the Normal Mode 1701, an Initial Acquisition Mode (1707) or to an Adjust Threshold and Acquire Mode (1709). In each of these modes, only upon acquiring a channel are the parameters of the channel compared with the threshold values to determine whether the thresholds are being violated by the acquired channels. See col. 24, line 21 to col. 26, line 13.

According to the handoff procedure 1705 as shown in Fig. 20, if a new channel has been successfully acquired in Step 2005, the

threshold levels are immediately checked in Step 2015. If the threshold levels are violated by the new channel (which has been successfully acquired), the procedure again newly acquires the same channel for n more times (Step 2019). If the newly acquired channel repeatedly violates the threshold levels after n attempts, only then is the Adjust Threshold Mode entered (Step 2021).

Thus, Balachandran does not teach the adjustment of a threshold when a handoff operation fails to transfer a call to another base station, as in the present invention, but instead adjusts a threshold when the newly acquired channel fails to meet the established threshold levels after a number of successive acquisitions of it. Clearly, Balachandran cannot test the thresholds of the channel unless the channel has been acquired. This is unambiguously disclosed at step 2005 of Fig. 20, wherein threshold testing is performed only where "synch" has been successfully established with the new channel. As such, there is no threshold adjustment in Balachandran where the handoff procedure fails to transfer a call to another base station as taught and claimed in the present application.

In step 2005 of Balachandran Fig. 20, a new channel has been successfully acquired, and thus transfer has been completed according to the definition of "handover operation" in the present specification.

In particular, according to the invention as claimed, and as shown in Fig. 3, when either field intensity level or circuit quality of an existing communication channel connection is determined to be below a set threshold, a handoff instruction is sent to the radio unit. If the handoff operation is successful (e.g., where the radio unit has successfully acquired a new channel) the threshold levels are restored to default values and the handoff operation ends, but field intensity level and circuit quality continue to be compared with thresholds. See Fig. 3, Step ST7 to Step ST2.

These steps correspond to steps 2005, 2015, 2017 in Balachandran Fig. 20. Thus, it is clear from the specification that "transferring the call to another base station" corresponds to a positive result in Step ST5 of Fig. 3, which corresponds to a positive result in Step 2005 of Fig. 20 of Balachandran. When a new channel has been successfully acquired (Step ST5 of Fig. 3 and Step 2005 of Balachandran Fig. 20), the newly acquired channel's parameters are subsequently compared against thresholds (Step ST2 of Fig. 3 and Step 2015 of Balachandran). But contrary to the present invention, when a transfer to another base station is unsuccessful (no channel acquisition, Step 2007 of Balachandran) instead of lowering default thresholds Balachandran goes to the initial acquisition mode (Fig. 20 Step 2021, the steps of which are described in Fig. 22).

In the Advisory action, the Examiner alleged in effect that Appellant's arguments are not commensurate with the claims. This is not correct. The Examiner's distinction between successful acquisition of a channel in a handoff procedure as shown in Balachandran and changing of a threshold when an attempt at handover fails or is unsuccessfully executed as claimed is misplaced.

As disclosed in the specification, a handover operation is unsuccessful when there is no other base station to which the call can be transferred. Conversely, if there does exist such a base station, then handover will be considered successful. Similarly in Balachandran, handover operation will be successful when a channel is acquired. Only where the same channel repeatedly reacquired constantly fails the threshold test and there are no more channels to acquire, does Balachandran adjust threshold levels. Consequently, the Examiner's position is incorrect.

The Rejection of claims 9 and 20 Is Improper

Claims 9 and 20 require restoration of at least one default threshold upon successful transfer of a call to another base station. Balachandran fails to teach this limitation. Contrary to the assertion of the Examiner, col. 25, lines 49-52 of Balachandran disclose that if channel acquisition is successful

(i.e. synchronization is established) in the Attempt Handoff Mode, and the acquired channel does not violate the thresholds, then control is transferred to the Normal Mode. There is no disclosure of restoration of any adjusted threshold to a default value as claimed.

The Rejection of claims 10, 12, 13, 21, 23 and 24 Is Improper

The rejection of claims 10, 12, 13, 21, 23 and 24 as being unpatentable over Balachandran in view of Blasiak also is improper and should be reversed. The final Office action relies on Blasiak as disclosing selective inhibition of changing of a default threshold value by a control unit. However, Blasiak fails to cure the basic deficiency of Balachandran with respect to independent claims 8 and 19, and thus no combination of these prior art references renders the claimed invention obvious under 35 U.S.C. § 103.

Additionally, claim 10 requires selecting means for enabling a user to selectively inhibit changing of a default threshold by the control unit, and claim 21 is the method analog of claim 10. Blasiak is directed to a method for minimizing message interruptions during a handoff. The passages of Blasiak relied on by the Examiner (i.e., col. 3, ll. 63-66; col. 5, ll. 24-25) do not disclose any such selecting means. To the contrary, those passages merely state that a signal quality threshold can be

either static or variable, and set by either the system or the user. No selective inhibition is disclosed by Blasiak.

Claims 12 and 23 require accepting an instruction from a user to inhibit a handover operation regardless of the result of comparison of the set forth signal parameters with the thresholds. To the contrary, Blasiak discloses at col. 5, ll. 11-15 that handoffs could be completely disallowed by setting signal quality thresholds so low that no signal could ever be below them. Blasiak does not disclose inhibiting a handover operation regardless of the result of comparison of the signal parameters with the thresholds.

Analogously, claims 13 and 24 require accepting an instruction from a user to execute a handover operation regardless of the result of comparison of the set forth signal parameters with the thresholds. To the contrary, Blasiak discloses at col. 5, ll. 24-30 simply that signal quality thresholds can be set either by the user or by the system. Blasiak does not disclose executing a handover operation regardless of the result of comparison of the signal parameters with the thresholds.

#### CONCLUSION

In view of the foregoing, claims 8-10, 12, 13, 19-21, 23 and 24. are submitted to be directed to a new and unobvious radio communication system, which is not taught or suggested by the

prior art. The Honorable Board is respectfully requested to reverse all grounds of rejection and to direct the passage of this application to issue.

Please charge any fee or credit any overpayment pursuant to 37 CFR 1.16 or 1.17 to Deposit Account No. 02-2135.

Respectfully submitted,

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APPENDIX OF CLAIMS ON APPEAL

8. A radio communication system, comprising:

a radio unit connected to a transmitter-receiver antenna, said radio unit measuring a field intensity level and a circuit quality value of a radio communication signal of a call received from a base station; and

a control unit which compares either or both of the measured field intensity level and circuit quality value with respective predefined default thresholds, sends a handover instruction to said radio unit to commence a handover operation to transfer said call to another base station if at least one of said measured field intensity level and said circuit quality value is below its respective default threshold, and lowers at least one of said default thresholds when said handover operation fails to transfer said call to another base station.

9. A radio communication system as set forth in claim 8, wherein said control unit restores said at least one default threshold upon successful transfer of said call to another base station.

10. A radio communication system as set forth in claim 8, further comprising selecting means for enabling a user to selectively inhibit changing of a default threshold by said control unit.

12. A radio communication system as set forth in claim 8, wherein said control unit accepts an instruction from a user to inhibit a

handover operation regardless of the result of comparison of said measured field intensity level and said circuit quality value with said thresholds.

13. (Amended) A radio communication system as set forth in claim 8, wherein said control unit accepts an instruction from a user to execute a handover operation regardless of the result of comparison of said measured field intensity level and said circuit quality value with said thresholds.

19. A method for controlling transfer of a radio communication signal of a call to a radio communication apparatus from one base station to another base station, comprising the steps of:

measuring a field intensity level and a circuit quality value of a radio communication signal of a call received from said one base station;

comparing either or both of the measured field intensity level and circuit quality value with respective predefined thresholds;

commencing a handover operation to transfer said call to another base station if at least one of said measured field intensity level and said circuit quality value is below its respective threshold; and

when said handover operation fails to transfer said call to another base station, lowering at least one of said thresholds.

20. A method as set forth in claim 19, further comprising the step of restoring said at least one default threshold upon successful transfer of said call to another base station.
21. A method as set forth in claim 19, further comprising the step of enabling a user to selectively inhibit changing of a default threshold.
23. A method as set forth in claim 19, further comprising the step of accepting an instruction from a user to inhibit a handover operation regardless of the result of comparison of said measured field intensity level and said circuit quality value with said thresholds.
24. A method as set forth in claim 19, further comprising the step of accepting an instruction from a user to execute a handover operation regardless of the result of comparison of said measured field intensity level and said circuit quality value with said thresholds.